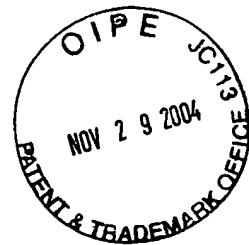


SEQUENCE LISTING



<110> Karlik, Stephen J.
 Pleiss, Michael A.
 Konradi, Andrei W.
 Grant, Francine S.
 Semko, Christopher M.
 Dressen, Darren B.
 Messersmith, Elizabeth
 Freedman, Stephen
 Yednock, Ted

<120> Composition for and Treatment of Demyelinating Diseases
 and Paralysis By Administration of Remyelinating Agents

<130> 034008-061

<140> US 10/763,424
 <141> 2004-01-26

<160> 71

<170> FastSEQ for Windows Version 4.0

<210> 1
 <211> 360
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(360)

<400> 1
 gtc aaa ctg cag cag tct ggg gca gag ctt gtg aag cca ggg gcc tca 48
 Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser
 1 5 10 15

gtc aag ttg ttc tgc aca gct tct ggc ttc aac att aaa gac acc tat 96
 Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr
 20 25 30

atg cac tgg gtg aag cag agg cct caa cag ggc ctg gag tgg att gga 144
 Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly
 35 40 45

agg att gat cct gcg agt ggc gat act aaa tat gac ccg aag ttc cag 192
 Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln
 50 55 60

gtc aag gcc act att aca gcg gac acg tcc tcc aac aca gcc tgg ctg 240
 Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu
 65 70 75 80

cag ctc agc agc ctg aca tct gag gac act gcc gtc tac tac tgt gca 288
 Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95

gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc caa 336
 Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly Gln
 100 105 110

ggg acc acg gtc acc gtc tcc tca 360
 Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 2
 <211> 120
 <212> PRT
 <213> Homo sapiens

<400> 2
 Val Lys Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala Ser 1 5 10 15
 Val Lys Leu Phe Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr Tyr 20 25 30
 Met His Trp Val Lys Gln Arg Pro Gln Gln Gly Leu Glu Trp Ile Gly 35 40 45
 Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe Gln 50 55 60
 Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Trp Leu 65 70 75 80
 Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala 85 90 95
 Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly Gln 100 105 110
 Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 3
 <211> 318
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(318)

<400> 3
 agt att gtg atg acc cag act ccc aaa ttc ctg ctt gtt tca gca gga 48
 Ser Ile Val Met Thr Gln Thr Pro Lys Phe Leu Leu Val Ser Ala Gly
 1 5 10 15

gac agg gtt acc ata acc tgc aag gcc agt cag agt gtg act aat gat 96
 Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val Thr Asn Asp
 20 25 30

gta gct tgg tac caa cag aag cca ggg cag tct cct aaa ctg ctg ata 144
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45

tat tat gca tcc aat cgc tac act gga gtc cct gat cgc ttc act ggc 192
 Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60

agt gga tat ggg acg gat ttc act ttc acc atc agc act gtg cag gct 240
 Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala
 65 70 75 80

gaa gac ctg gca gtt tat ttc tgt cag cag gat tat agc tct ccg tac 288
 Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr
 85 90 95

acg ttc gga ggg ggg acc aag ctg gag atc 318
 Thr Phe Gly Gly Thr Lys Leu Glu Ile
 100 105

<210> 4
 <211> 106
 <212> PRT
 <213> Homo sapiens

<400> 4
 Ser Ile Val Met Thr Gln Thr Pro Lys Phe Leu Leu Val Ser Ala Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val Thr Asn Asp
 20 25 30
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35 40 45
 Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe Thr Gly
 50 55 60
 Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Thr Val Gln Ala
 65 70 75 80
 Glu Asp Leu Ala Val Tyr Phe Cys Gln Gln Asp Tyr Ser Ser Pro Tyr
 85 90 95
 Thr Phe Gly Gly Thr Lys Leu Glu Ile
 100 105

<210> 5
 <211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(429)

<400> 5
 atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15

gcc cac tcc cag gtc caa ctg cag gag tcc ggt gct gaa gtt gtt aaa 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys
 20 25 30

ccg ggt tcc tcc gtt aaa ctg tcc aaa gct tcc ggt ttc aac atc 144
 Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile
 35 40 45

aaa gac acc tac atg cac tgg gtt aaa cag cgt ccg ggt cag ggt ctg 192
 Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu

50	55	60	
gaa tgg atc ggt atc gac ccg gct tcc ggt gac acc aaa tac gac			240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp			
65	70	75	80
ccg aaa ttc cag gtt aaa gct acc atc acc gct gac gaa tcc acc tcc			288
Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser			
85	90	95	
acc gct tac ctg gaa ctg tcc tcc ctg cgt tcc gaa gac acc gct gtt			336
Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val			
100	105	110	
tac tac tgc gct gac ggt atg tgg gtt tcc acc ggt tac gct ctg gac			384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp			
115	120	125	
ttc tgg ggt cag ggt acc acg gtc acc gtc tcc tca ggt gag tcc			429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser			
130	135	140	

<210> 6
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 6
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Ala Glu Val Val Lys
 20 25 30
 Pro Gly Ser Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Phe Asn Ile
 35 40 45
 Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Gln Gly Leu
 50 55 60
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Glu Ser Thr Ser
 85 90 95
 Thr Ala Tyr Leu Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 7
 <211> 383
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> CDS
 <222> (1)...(375)

<400> 7
 atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc ggt 48
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15

gtt cac tcc atc gtt atg acc cag tcc ccg gac tcc ctg gct gtt tcc 96
 Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
 20 25 30

ctg ggt gaa cgt gtt acc atc aac tgc aaa gct tcc cag tcc gtt acc 144
 Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
 35 40 45

aac gac gtt gct tgg tac cag cag aaa ccg ggt cag tcc ccg aaa ctg 192
 Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
 50 55 60

ctg atc tac tac gct tcc aac cgt tac acc ggt gtt ccg gac cgt ttc 240
 Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
 65 70 75 80

tcc ggt tcc ggt tac ggt acc gac ttc acc ttc acc atc tcc tcc gtt 288
 Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
 85 90 95

cag gct gaa gac gtt gct gtt tac tac tgc cag cag gac tac tcc tcc 336
 Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
 100 105 110

ccg tac acc ttc ggt ggt acc aaa ctg gag atc taa ggatcctc 383
 Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile *
 115 120

<210> 8
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 8
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 Val His Ser Ile Val Met Thr Gln Ser Pro Asp Ser Leu Ala Val Ser
 20 25 30
 Leu Gly Glu Arg Val Thr Ile Asn Cys Lys Ala Ser Gln Ser Val Thr
 35 40 45
 Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu
 50 55 60
 Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg Phe
 65 70 75 80
 Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser Val
 85 90 95
 Gln Ala Glu Asp Val Ala Val Tyr Tyr Cys Gln Gln Asp Tyr Ser Ser
 100 105 110
 Pro Tyr Thr Phe Gly Gly Thr Lys Leu Glu Ile
 115 120

<210> 9

<211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(429)

<400> 9
 atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15
 gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45
 aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
 Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60
 gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac 288
 Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
 85 90 95
 aca gcc tgg ctg aga ctc agc agc gtg aca gcc gac acc gac gtc 336
 Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110
 tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 429
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 10
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 10
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45

Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
 85 90 95
 Thr Ala Trp Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 11
 <211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)....(429)

<400> 11 48
 atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
 Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80

ccg aag ttc cag gtc aaa gcg aca att acg gca gac acc agc agc aac 288
 Pro Lys Phe Gln Val Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
 85 90 95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gcg gtc 336
 Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 429
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 12
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 12

Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Cys	Leu	Leu	Ala	Val	Ala	Pro	Gly
1									5	10				15	
Ala	His	Ser	Gln	Val	Gln	Leu	Gln	Glu	Ser	Gly	Pro	Gly	Leu	Val	Arg
									20	25			30		
Pro	Ser	Gln	Thr	Leu	Ser	Leu	Thr	Cys	Thr	Val	Ser	Gly	Phe	Asn	Ile
									35	40		45			
Lys	Asp	Thr	Tyr	Met	His	Trp	Val	Arg	Gln	Pro	Pro	Gly	Arg	Gly	Leu
									50	55		60			
Glu	Trp	Ile	Gly	Arg	Ile	Asp	Pro	Ala	Ser	Gly	Asp	Thr	Lys	Tyr	Asp
									65	70		75		80	
Pro	Lys	Phe	Gln	Val	Lys	Ala	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Ser	Asn
									85	90		95			
Gln	Phe	Ser	Leu	Arg	Leu	Ser	Ser	Val	Thr	Ala	Ala	Asp	Thr	Ala	Val
									100	105		110			
Tyr	Tyr	Cys	Ala	Asp	Gly	Met	Trp	Val	Ser	Thr	Gly	Tyr	Ala	Leu	Asp
									115	120		125			
Phe	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	Gly	Glu	Ser	
									130	135		140			

<210> 13
 <211> 372
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(372)

<400> 13

cag	gtc	caa	ctg	cag	gag	agc	ggt	cca	ggt	ctt	gtg	aga	cct	agc	cag
Gln	Val	Gln	Leu	Gln	Glu	Ser	Gly	Pro	Gly	Leu	Val	Arg	Pro	Ser	Gln
1								5		10			15		
acc	ctg	agc	ctg	acc	tgc	acc	gtg	tct	ggc	ttc	aac	att	aaa	gac	acc
Thr	Leu	Ser	Leu	Thr	Cys	Thr	Val	Ser	Gly	Phe	Asn	Ile	Lys	Asp	Thr
									20	25		30			
tat	atg	cac	tgg	gtg	aga	cag	cca	cct	gga	cga	ggt	ctt	gag	tgg	att
Tyr	Met	His	Trp	Val	Arg	Gln	Pro	Pro	Gly	Arg	Gly	Leu	Glu	Trp	Ile
									35	40		45			
gga	agg	att	gat	cct	gcg	agt	ggc	gat	act	aaa	tat	gac	ccg	aag	ttc
Gly	Arg	Ile	Asp	Pro	Ala	Ser	Gly	Asp	Thr	Lys	Tyr	Asp	Pro	Lys	Phe
									50	55		60			
cag	gtc	aga	gtg	aca	atg	ctg	gta	gac	acc	agc	agc	aac	cag	ttc	agc
Gln	Val	Arg	Val	Thr	Met	Leu	Val	Asp	Thr	Ser	Ser	Asn	Gln	Phe	Ser
									65	70		75		80	

ctg aga ctc agc agc gtg aca tct gag gac acc gcc gtc tat tat tgt 288
 Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

gca gac gga atg tgg gta tca acg gga tat gct ctg gac ttc tgg ggc 336
 Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
 100 105 110

caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 372
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 115 120

<210> 14
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 14
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu Glu Trp Ile
 35 40 45
 Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn Gln Phe Ser
 65 70 75 80
 Leu Arg Leu Ser Ser Val Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp Phe Trp Gly
 100 105 110
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 115 120

<210> 15
 <211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(429)

<400> 15 48
 atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30

cct agc cag acc ctg agc ctg acc tgc acc gtg tct ggc ttc aac att 144
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45

aaa gac acc tat atg cac tgg gtg aaa cag cga cct gga cga ggt ctt	192
Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu	
50 55 60	
gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac	240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp	
65 70 75 80	
ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac	288
Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn	
85 90 95	
cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc gac gtc	336
Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val	
100 105 110	
tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac	384
Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp	
115 120 125	
ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc	429
Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser	
130 135 140	

<210> 16
 <211> 143
 <212> PRT
 <213> Homo sapiens

<400> 16
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Phe Asn Ile
 35 40 45
 Lys Asp Thr Tyr Met His Trp Val Lys Gln Arg Pro Gly Arg Gly Leu
 50 55 60
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
 85 90 95
 Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 17
 <211> 429
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS

<222> (1)...(429)

<400> 17
 atg gac tgg acc tgg agg gtc ttc tgc ttg ctg gct gta gca cca ggt 48
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15

gcc cac tcc cag gtc caa ctg cag gag agc ggt cca ggt ctt gtg aga 96
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30

cct agc cag acc ctg agc ctg acc tgc acc gcg tct ggc ttc aac att 144
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
 35 40 45

aaa gac acc tat atg cac tgg gtg aga cag cca cct gga cga ggt ctt 192
 Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60

gag tgg att gga agg att gat cct gcg agt ggc gat act aaa tat gac 240
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80

ccg aag ttc cag gtc aga gtg aca atg ctg gta gac acc agc agc aac 288
 Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
 85 90 95

cag ttc agc ctg aga ctc agc agc gtg aca gcc gcc gac acc acc gtc 336
 Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110

tat tat tgt gca gac gga atg tgg gta tca acg gga tat gct ctg gac 384
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125

ttc tgg ggc caa ggg acc acg gtc acc gtc tcc tca ggt gag tcc 429
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 18

<211> 143

<212> PRT

<213> Homo sapiens

<400> 18
 Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala Val Ala Pro Gly
 1 5 10 15
 Ala His Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Arg
 20 25 30
 Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Ala Ser Gly Phe Asn Ile
 35 40 45
 Lys Asp Thr Tyr Met His Trp Val Arg Gln Pro Pro Gly Arg Gly Leu
 50 55 60
 Glu Trp Ile Gly Arg Ile Asp Pro Ala Ser Gly Asp Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Val Arg Val Thr Met Leu Val Asp Thr Ser Ser Asn
 85 90 95

Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val
 100 105 110
 Tyr Tyr Cys Ala Asp Gly Met Trp Val Ser Thr Gly Tyr Ala Leu Asp
 115 120 125
 Phe Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Glu Ser
 130 135 140

<210> 19
 <211> 386
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (1)...(386)

<400> 19 48
 atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc gct acc acc ggt
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15

gtt cac tcc gac atc cag ctg acc cag agc cca agc agc ctg agc gcc 96
 Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30

agc gtg ggt gac aga gtg acc atc acc tgt aag gcc agt cag agt gtg 144
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
 35 40 45

act aat gat gta gct tgg tac cag cag aag cca ggt aag gct cca aag 192
 Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys
 50 55 60

ctg ctg atc tac tat gca tcc aat cgc tac act ggt gtg cca agc aga 240
 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Ser Arg
 65 70 75 80

ttc agc ggt agc ggt acc gac ttc acc ttc acc atc agc agc 288
 Phe Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 85 90 95

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc 336
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag 384
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125

tg 386

<210> 20
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 20
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly

1	5	10	15
Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser	Leu Ser Ala		
20	25	30	
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser	Gln Ser Val		
35	40	45	
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys	Ala Pro Lys		
50	55	60	
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val	Pro Ser Arg		
65	70	75	80
Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr	Ile Ser Ser		
85	90	95	
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln	Asp Tyr Ser		
100	105	110	
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile	Lys Arg Lys		
115	120	125	

<210> 21
<211> 386
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(386)

<400> 21			
atg ggt tgg tcc tgc atc atc ctg ttc ctg gtt gct acc	acc gct acc ggt	48	
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr	Ala Thr Gly		
1	5	10	15
gtc cac tcc agc atc gtg atg acc cag agc cca agc	agc ctg agc gcc	96	
Val His Ser Ser Ile Val Met Thr Gln Ser Pro Ser Ser	Leu Ser Ala		
20	25	30	
agc gtg ggt gac aga gtg acc atc acc tgt aag gcc	agt cag agt gtg	144	
Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser	Gln Ser Val		
35	40	45	
act aat gat gta gct tgg tac cag cag aag cca ggt	aag gct cca aag	192	
Thr Asn Asp Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys	Ala Pro Lys		
50	55	60	
ctg ctg atc tac tat gca tcc aat cgc tac act ggt	gtg cca gat aga	240	
Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val	Pro Asp Arg		
65	70	75	80
ttc agc ggt agc ggt tat ggt acc gac ttc acc ttc	acc atc agc agc	288	
Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr	Ile Ser Ser		
85	90	95	
ctc cag cca gag gac atc gcc acc tac tac tgc cag	cag gat tat agc	336	
Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln	Asp Tyr Ser		
100	105	110	
tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa	atc aaa cgt aag	384	
Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile	Lys Arg Lys		
115	120	125	

tg

386

<210> 22
<211> 128
<212> PRT
<213> Homo sapiens

<400> 22

Met	Gly	Trp	Ser	Cys	Ile	Ile	Leu	Phe	Leu	Val	Ala	Thr	Ala	Thr	Gly
1				5					10				15		
Val	His	Ser	Ser	Ile	Val	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala
				20				25				30			
Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Ser	Val
	35				40				45						
Thr	Asn	Asp	Val	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys
	50				55			60							
Leu	Leu	Ile	Tyr	Tyr	Ala	Ser	Asn	Arg	Tyr	Thr	Gly	Val	Pro	Asp	Arg
65					70				75			80			
Phe	Ser	Gly	Ser	Gly	Tyr	Gly	Thr	Asp	Phe	Thr	Phe	Thr	Ile	Ser	Ser
	85					90				95					
Leu	Gln	Pro	Glu	Asp	Ile	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Asp	Tyr	Ser
	100				105			105			110				
Ser	Pro	Tyr	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys	Arg	Lys
	115				120				125						

<210> 23
<211> 386
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)...(386)

<400> 23

atg	ggg	tgg	tcc	tgc	atc	atc	ctg	ttc	ctg	gtt	gct	acc	gct	acc	ggg
Met	Gly	Trp	Ser	Cys	Ile	Ile	Leu	Phe	Leu	Val	Ala	Thr	Ala	Thr	Gly
1					5				10			15			48
gtc	cac	tcc	gac	atc	cag	atg	acc	cag	agc	cca	agc	agc	ctg	agc	gcc
Val	His	Ser	Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala
				20				25			30				96
agc	gtg	ggg	gac	aga	gtg	acc	atc	acc	tgt	aag	gcc	agt	cag	agt	gtg
Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Lys	Ala	Ser	Gln	Ser	Val
	35				40				45						
act	aat	gat	gtt	acc	tgg	tac	cac	cag	aag	cca	ggg	aag	gct	cca	aag
Thr	Asn	Asp	Val	Ala	Trp	Tyr	His	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Lys
	50				55			60							
ctg	ctg	atc	tac	tat	gca	tcc	aat	cgc	tac	act	ggg	gtg	cca	gat	aga
Leu	Leu	Ile	Tyr	Tyr	Ala	Ser	Asn	Arg	Tyr	Thr	Gly	Val	Pro	Asp	Arg
	65				70				75			80			
ttc	agc	ggg	agc	ggg	tat	ggt	acc	gac	ttc	acc	atc	agc	agc	agc	ggc
Phe	Ser	Gly	Ser	Gly	Tyr	Gly	Thr	Asp	Phe	Thr	Phe	Thr	Ile	Ser	Ser
	85					90				95					

ctc cag cca gag gac atc gcc acc tac tac tgc cag cag gat tat agc 336
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110

tct ccg tac acg ttc ggc caa ggg acc aag gtg gaa atc aaa cgt aag 384
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125

tg 386

<210> 24
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 24
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
 1 5 10 15
 Val His Ser Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala
 20 25 30
 Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys Ala Ser Gln Ser Val
 35 40 45
 Thr Asn Asp Val Ala Trp Tyr His Gln Lys Pro Gly Lys Ala Pro Lys
 50 55 60
 Leu Leu Ile Tyr Tyr Ala Ser Asn Arg Tyr Thr Gly Val Pro Asp Arg
 65 70 75 80
 Phe Ser Gly Ser Gly Tyr Gly Thr Asp Phe Thr Phe Thr Ile Ser Ser
 85 90 95
 Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Asp Tyr Ser
 100 105 110
 Ser Pro Tyr Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys Arg Lys
 115 120 125

<210> 25
 <211> 37
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (20)...(37)

<400> 25
 cagaaaagctt gccgccacc atg aga ccg tct att cag 37
 Met Arg Pro Ser Ile Gln
 1 5

<210> 26
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 26
 Met Arg Pro Ser Ile Gln
 1 5

<210> 27
 <211> 35
 <212> DNA
 <213> Homo sapiens

<400> 27
 ccgaggatcc actcacgttt gatttccagc ttggt 35

<210> 28
 <211> 37
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (20) ... (37)

<400> 28
 cagaaagctt gcccgcacc atg aaa tgc agc tgg gtc 37
 Met Lys Cys Ser Trp Val
 1 5

<210> 29
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 29
 Met Lys Cys Ser Trp Val
 1 5

<210> 30
 <211> 33
 <212> DNA
 <213> Homo sapiens

<400> 30
 ccgaggatcc actcacctga ggagacggtg act 33

<210> 31
 <211> 39
 <212> DNA
 <213> Homo sapiens

<400> 31
 gatggtgact ctagtccta cagatgcaga cagtggaga 39

<210> 32
 <211> 32
 <212> DNA
 <213> Homo sapiens

<400> 32
 ctgttaggaga tagagtcacc atcacttgca ag 32

<210> 33
 <211> 39

<212> DNA		
<213> Homo sapiens		
<400> 33		
aggagcttt ccaggtgtct gttggtagcca agccatata		39
<210> 34		
<211> 41		
<212> DNA		
<213> Homo sapiens		
<400> 34		
accaacagac acctggaaaa gtccttaggc tgctcataca t		41
<210> 35		
<211> 40		
<212> DNA		
<213> Homo sapiens		
<400> 35		
gcaggctgct gatggtgaaa gtataatctc tcccagaccc		40
<210> 36		
<211> 42		
<212> DNA		
<213> Homo sapiens		
<400> 36		
actttcacca tcagcagcct gcagcctgaa gatattgcaa ct,		42
<210> 37		
<211> 59		
<212> DNA		
<213> Homo sapiens		
<400> 37		
ccgaggatcc actcacgttt gatttccacc ttgggtgcctt gaccgaacgt ccacagatt		59
<210> 38		
<211> 33		
<212> DNA		
<213> Homo sapiens		
<400> 38		
ggaaaagctc ctaggctgct catatattac aca		33
<210> 39		
<211> 38		
<212> DNA		
<213> Homo sapiens		
<400> 39		
ccgaggatcc actcacgttt gatttccacc tttgtgcc		38
<210> 40		
<211> 51		
<212> DNA		
<213> Homo sapiens		

<400> 40
 aacccagtg atatagggt cttaatgtt gaaaccgcta gctttacagc t 51
 <210> 41
 <211> 67
 <212> DNA
 <213> Homo sapiens
 <400> 41
 aaagacaccc atatacactg gtttagacag gcccctggcc aaaggctgga gtggatggga 60
 agattg 67
 <210> 42
 <211> 26
 <212> DNA
 <213> Homo sapiens
 <400> 42
 gacccggccc tggaaacttcg ggtcat 26
 <210> 43
 <211> 66
 <212> DNA
 <213> Homo sapiens
 <400> 43
 gacccgaagt tccagggccg ggtcaccatc accgcagaca cctctgccag caccgcctac 60
 atggaa 66
 <210> 44
 <211> 64
 <212> DNA
 <213> Homo sapiens
 <400> 44
 ccatagcata gaccccgtag ttaccataat atccctctct ggcgcagtag tagactgcag 60
 tgtc 64
 <210> 45
 <211> 63
 <212> DNA
 <213> Homo sapiens
 <400> 45
 ggtaactacg gggcttatgc tatggactac tgggtcaag gaacccttgt caccgtctcc 60
 tca 63
 <210> 46
 <211> 37
 <212> DNA
 <213> Homo sapiens
 <400> 46
 ccagggcccg gtcaccatca ccagagacac ctctgcc 37
 <210> 47
 <211> 27
 <212> DNA
 <213> Homo sapiens

<400> 47
 caggccccctg gccaaaggct ggagtgg 27

<210> 48
 <211> 17
 <212> DNA
 <213> Homo sapiens

<400> 48
 tacgcaaacc gcctctc 17

<210> 49
 <211> 18
 <212> DNA
 <213> Homo sapiens

<400> 49
 gagtgaccca tatgcgg 18

<210> 50
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 50
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ser Phe Thr Ser Tyr
 20 25 30
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Val
 35 40 45
 Gly Tyr Ile Asp Pro Phe Asn Gly Gly Thr Ser Tyr Asn Gln Lys Phe
 50 55 60
 Lys Gly Lys Val Thr Met Thr Val Asp Thr Ser Thr Asn Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Gly Asn Arg Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 51
 <211> 483
 <212> DNA
 <213> Mouse

<220>
 <221> CDS
 <222> (53)...(432)

<400> 51
 atgaggccc ctgctcagat ttttggattc ttggcagga gacgtttag aa atg aga 58
 Met Arg
 1

ccg tct att cag ttc ctg ggg ctc ttg ttg ttc tgg ctt cat ggt gct 106
 Pro Ser Ile Gln Phe Leu Gly Leu Leu Phe Trp Leu His Gly Ala

5

10

15

cag tgt gac atc cag atg aca cag tct cca tcc tca ctg tct gca tct 154
 Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser
 20 25 30

ctg gga ggc aaa gtc acc atc act tgc aag aca agc caa gac att aac 202
 Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn
 35 40 45 50

aag tat atg gct tgg tac caa cac aag cct gga aaa cgt cct agg ctg 250
 Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu
 55 60 65

ctc ata cat tac aca tct gca tta cag cca ggc atc cca tca agg ttc 298
 Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe
 70 75 80

agt gga agt ggg tct ggg aga gat tat tcc ttc aac atc agc aac ctg 346
 Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu
 85 90 95

gag cct gaa gat att gca act tat tat tgt cta cag tat gat aat ctg 394
 Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu
 100 105 110

tgg acg ttc ggt gga ggc acc aag ctg gaa atc aaa cg ggctgatgct 442
 Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 115 120 125

gcaccaactg tatccatctt cccaccatcc acccggtatc c 483

<210> 52
 <211> 126
 <212> PRT
 <213> Mouse

<400> 52
 Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
 1 5 10 15
 Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 20 25 30
 Ala Ser Leu Gly Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp
 35 40 45
 Ile Asn Lys Tyr Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro
 50 55 60
 Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser
 85 90 95
 Asn Leu Glu Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp
 100 105 110
 Asn Leu Trp Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
 115 120 125

<210> 53
 <211> 470
 <212> DNA

<213> Mouse

<220>

<221> CDS

<222> (1)...(432)

<400> 53

atg aaa tgc agc tgg gtc atg ttc ttc ctg atg gca gtg gtt aca ggg	48
Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly	
1 5 10 15	

gtc aat tca gag gtt cag ctg cag cag tct ggg gca gag ctt gtg aag	96
Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys	
20 25 30	

cca ggg gcc tca gtc aag ttg tcc tgc aca gct tct ggc ttc aac att	144
Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile	
35 40 45	

aaa gac acc tat ata cac tgt gtg aag cag agg cct gaa cag ggc ctg	192
Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu	
50 55 60	

gag tgg att gga agg att gat cct gcg aat ggt tat act aaa tat gac	240
Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp	
65 70 75 80	

ccg aag ttc cag ggc aag gcc act ata aca gct gac aca tcc tcc aac	288
Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn	
85 90 95	

aca gcc tac ctg cag ctc agc agc ctg aca tct gag gac act gcc gtc	336
Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val	
100 105 110	

tat ttc tgt gct aga gag gga tat tat ggt aac tac ggg gtc tat gct	384
Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala	
115 120 125	

atg gac tac tgg ggt caa gga acc tca gtc acc gtc tcc tca gcc aaa	432
Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys	
130 135 140	

acgacaccccatctgtcta tccactggcc cggatcc	470
--	-----

<210> 54

<211> 144

<212> PRT

<213> Mouse

<400> 54

Met Lys Cys Ser Trp Val Met Phe Phe Leu Met Ala Val Val Thr Gly	
1 5 10 15	

Val Asn Ser Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys	
20 25 30	

Pro Gly Ala Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile	
35 40 45	

Lys Asp Thr Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu	
50 55 60	

Glu Trp Ile Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp
 65 70 75 80
 Pro Lys Phe Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn
 85 90 95
 Thr Ala Tyr Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val
 100 105 110
 Tyr Phe Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala
 115 120 125
 Met Asp Tyr Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser Ala Lys
 130 135 140

<210> 55
 <211> 106
 <212> PRT
 <213> Homo sapiens

<400> 55
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Leu Gly
 1 5 10 15
 Gly Lys Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
 20 25 30
 Met Ala Trp Tyr Gln His Lys Pro Gly Lys Arg Pro Arg Leu Leu Ile
 35 40 45
 His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Asp Tyr Ser Phe Asn Ile Ser Asn Leu Glu Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
 85 90 95
 Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 56
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 56
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ile Lys Tyr
 20 25 30
 Leu Asn Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Glu Ala Ser Asn Leu Gln Ala Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Gln Ser Leu Pro Tyr
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Leu Gln Ile Thr
 100 105

<210> 57
 <211> 106
 <212> PRT

<213> Homo sapiens

<400> 57

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Lys Thr Ser Gln Asp Ile Asn Lys Tyr
 20 25 30
 Met Ala Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Arg Leu Leu Ile
 35 40 45
 His Tyr Thr Ser Ala Leu Gln Pro Gly Ile Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Arg Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Ile Ala Thr Tyr Tyr Cys Leu Gln Tyr Asp Asn Leu Trp Thr
 85 90 95
 Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 58

<211> 6

<212> PRT

<213> Homo sapiens

<400> 58

Arg Ile Arg Val Glu Lys
 1 5

<210> 59

<211> 123

<212> PRT

<213> Homo sapiens

<400> 59

Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Ile His Cys Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80
 Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Phe Cys
 85 90 95
 Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Ser Val Thr Val Ser Ser
 115 120

<210> 60

<211> 119

<212> PRT

<213> Homo sapiens

<400> 60

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
 20 25 30
 Ala Met His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
 35 40 45
 Gly Trp Ile Asn Ala Gly Asn Gly Asn Thr Lys Tyr Ser Gln Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Arg Asp Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Gly Tyr Tyr Gly Ser Gly Ser Asn Tyr Trp Gly Gln Gly
 100 105 110
 Thr Leu Val Thr Val Ser Ser
 115

<210> 61
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 61
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Ile His Trp Val Arg Gln Ala Pro Gly Gln Arg Leu Glu Trp Met
 35 40 45
 Asx Arg Ile Asp Pro Ala Asn Gly Tyr Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr Gly Val Tyr Ala Met Asp Tyr
 100 105 110
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 62
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 62
 Phe Asn Ile Lys Gly Ala
 1 5

<210> 63
 <211> 6
 <212> PRT
 <213> Homo sapiens

<400> 63
 Phe Asn Ile Lys Ala Phe

1

5

<210> 64
 <211> 406
 <212> DNA
 <213> Homo sapiens

<220>
 <221> CDS
 <222> (16) ... (393)

<400> 64
 aagcttgcgg ccacc atg aga ccg tct att cag ttc ctg ggg ctc ttg ttg 51
 Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu
 1 5 10

ttc tgg ctt cat ggt gct cag tgt gac atc cag atg aca cag tct cca 99
 Phe Trp Leu His Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro
 15 20 25

tcc tca ctg tct gca tct gta gga gat aga gtc acc atc act tgc aag 147
 Ser Ser Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Lys
 30 35 40

aca agc caa gac att aac aag tat atg gct tgg tac caa cag aca cct 195
 Thr Ser Gln Asp Ile Asn Lys Tyr Met Ala Trp Tyr Gln Gln Thr Pro
 45 50 55 60

gga aaa gct cct agg ctg ctc ata cat tac aca tct gca tta cag cca 243
 Gly Lys Ala Pro Arg Leu Leu Ile His Tyr Thr Ser Ala Leu Gln Pro
 65 70 75

ggc atc cca tca agg ttc agt gga agt ggg tct ggg aga gat tat act 291
 Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Arg Asp Tyr Thr
 80 85 90

ttc acc atc agc agc ctg cag cct gaa gat att gca act tat tat tgt 339
 Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
 95 100 105

cta cag tat gat aat ctg tgg acg ttc ggt caa ggc acc aag gtg gaa 387
 Leu Gln Tyr Asp Asn Leu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
 110 115 120

atc aaa cgtgagtggaa tcc 406
 Ile Lys
 125

<210> 65
 <211> 126
 <212> PRT
 <213> Homo sapiens

<400> 65
 Met Arg Pro Ser Ile Gln Phe Leu Gly Leu Leu Leu Phe Trp Leu His
 1 5 10 15
 Gly Ala Gln Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser

	20					25					30				
Ala	Ser	Val	Gly	Asp	Arg	Val	Thr	Ile	Thr	Cys	Lys	Thr	Ser	Gln	Asp
							35		40					45	
Ile	Asn	Lys	Tyr	Met	Ala	Trp	Tyr	Gln	Gln	Thr	Pro	Gly	Lys	Ala	Pro
							50		55				60		
Arg	Leu	Leu	Ile	His	Tyr	Thr	Ser	Ala	Leu	Gln	Pro	Gly	Ile	Pro	Ser
							65		70				75		80
Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Arg	Asp	Tyr	Thr	Phe	Thr	Ile	Ser
							85		90					95	
Ser	Leu	Gln	Pro	Glu	Asp	Ile	Ala	Thr	Tyr	Tyr	Cys	Leu	Gln	Tyr	Asp
							100		105					110	
Asn	Leu	Trp	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys		
							115		120				125		

<210> 66
<211> 454
<212> DNA
<213> *Homo sapiens*

<220>
<221> CDS
<222> (16) . . . (441)

<400> 66
aagcttgccg ccacc atg gac tgg acc tgg cgc gtg ttt tgc ctg ctc gcc 51
Met Asp Trp Thr Trp Arg Val Phe Cys Leu Leu Ala
1 5 10

gtg gct cct ggg gcc cac agc cag gtg caa cta gtg cag tcc ggc gcc 99
Val Ala Pro Gly Ala His Ser Gln Val Gln Leu Val Gln Ser Gly Ala
15 20 25

gaa	gtg	aag	aaa	ccc	ggt	gct	tcc	gtg	aaa	gtc	agc	tgt	aaa	gct	agc	147
Glu	Val	Lys	Lys	Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	
30								35							40	

```

gg ttc aac att aaa gac acc tat ata cac tgg gtt aga cag gcc cct 195
Gly Phe Asn Ile Lys Asp Thr Tyr Ile His Trp Val Arg Gln Ala Pro
 45          50          55          60

```

```

ggc caa agg ctg gag tgg atg gga agg att gat cct gcg aat ggt tat 243
Gly Gln Arg Leu Glu Trp Met Gly Arg Ile Asp Pro Ala Asn Gly Tyr
65          70          75

```

act	aaa	tat	gac	ccg	aag	ttc	cag	ggc	cg	gtc	acc	atc	acc	gca	gac	291
Thr	Lys	Tyr	Asp	Pro	Lys	Phe	Gln	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	
				80				85				90				

```

acc tct gcc agc acc gcc tac atg gaa ctg tcc agc ctg cgc tcc gag 339
Thr Ser Ala Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu
95          100          105

```

```

gac act gca gtc tac tac tgc gcc aga gag gga tat tat tat ggt aac tac 387
Asp Thr Ala Val Tyr Tyr Cys Ala Arg Glu Gly Tyr Tyr Gly Asn Tyr
 110          115          120

```

ggg gtc tat gct atg gac tac tgg ggt caa gga acc ctt gtc acc acc gtc 435
 Gly Val Tyr Ala Met Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val

125	130	135	140	
tcc tca ggtgagtgga tcc				454
Ser Ser				

<210> 67
<211> 142
<212> PRT
<213> Homo sapiens

<400> 67

Met	Asp	Trp	Thr	Trp	Arg	Val	Phe	Cys	Leu	Leu	Ala	Val	Ala	Pro	Gly
1									10					15	
Ala	His	Ser	Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Lys	Lys
									25					30	
Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Phe	Asn	Ile
									40				45		
Lys	Asp	Thr	Tyr	Ile	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Arg	Leu
									55				60		
Glu	Trp	Met	Gly	Arg	Ile	Asp	Pro	Ala	Asn	Gly	Tyr	Thr	Lys	Tyr	Asp
65										75				80	
Pro	Lys	Phe	Gln	Gly	Arg	Val	Thr	Ile	Thr	Ala	Asp	Thr	Ser	Ala	Ser
									90				95		
Thr	Ala	Tyr	Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val
									105				110		
Tyr	Tyr	Cys	Ala	Arg	Glu	Gly	Tyr	Tyr	Gly	Asn	Tyr	Gly	Val	Tyr	Ala
									120				125		
Met	Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser		
									135				140		

<210> 68
<211> 109
<212> PRT
<213> Homo sapiens

<400> 68

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Leu	Gly
1										10				15	
Asp	Arg	Val	Thr	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Asp	Asp	Ile	Ser	Asn
										25			30		
Tyr	Leu	Asn	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gly	Ser	Pro	Lys	Leu	Leu
									40			45			
Ile	Tyr	Tyr	Ala	Ser	Arg	Leu	His	Ser	Gly	Val	Pro	Ser	Arg	Phe	Ser
									55			60			
Gly	Ser	Gly	Ser	Gly	Thr	Asp	Tyr	Ser	Leu	Thr	Ile	Ser	Asn	Leu	Glu
65									70			75			80
Gln	Glu	Asp	Ile	Ala	Thr	Tyr	Phe	Cys	Gln	Gln	Gly	Asn	Thr	Leu	Pro
									85			90			95
Pro	Arg	Thr	Phe	Gly	Gly	Gly	Thr	Lys	Leu	Glu	Ile	Lys			
									100			105			

<210> 69
<211> 130
<212> PRT
<213> Homo sapiens

<220>
 <221> VARIANT
 <222> 32, 33
 <223> Xaa = Any Amino Acid

<400> 69
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ser Leu Val Xaa
 20 25 30
 Xaa Ser Ile Ser Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys
 35 40 45
 Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
 50 55 60
 Ala Pro Lys Leu Leu Ile Tyr Ala Ala Ser Ser Leu Glu Ser Gly Val
 65 70 75 80
 Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr
 85 90 95
 Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln
 100 105 110
 Tyr Asn Ser Leu Pro Glu Trp Thr Phe Gly Gln Gly Thr Lys Val Glu
 115 120 125
 Ile Lys
 130

<210> 70
 <211> 125
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 106, 120
 <223> Xaa = Any Amino Acid

<400> 70
 Glu Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Lys Pro Gly Ala
 1 5 10 15
 Ser Val Lys Leu Ser Cys Thr Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30
 Tyr Met His Trp Val Lys Gln Arg Pro Glu Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Arg Ile Asp Pro Ala Asn Gly Asn Thr Lys Tyr Asp Pro Lys Phe
 50 55 60
 Gln Gly Lys Ala Thr Ile Thr Ala Asp Thr Ser Ser Asn Thr Ala Tyr
 65 70 75 80
 Leu Gln Leu Ser Ser Leu Thr Ser Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Tyr Tyr Tyr Asp Ser Xaa Val Gly Tyr Tyr Ala Met
 100 105 110
 Asp Tyr Trp Gly Gln Gly Thr Xaa Val Thr Val Ser Ser
 115 120 125

<210> 71
 <211> 129
 <212> PRT
 <213> Homo sapiens

<220>
<221> VARIANT
<222> 115
<223> Xaa = Any Amino Acid

<400> 71
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ala
1 5 10 15
Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr
20 25 30
Ala Ile Ser Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45
Gly Trp Ile Asn Pro Tyr Gly Asn Gly Asp Thr Asn Tyr Ala Gln Lys
50 55 60
Phe Gln Gly Arg Val Thr Ile Thr Ala Asp Thr Ser Thr Ser Thr Ala
65 70 75 80
Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr
85 90 95
Cys Ala Arg Ala Pro Gly Tyr Gly Ser Gly Gly Cys Tyr Arg Gly
100 105 110
Asp Tyr Xaa Phe Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser
115 120 125
Ser